a dense plexus of valved vessels on the anterior surface of the abdominal wall, corresponding to that on the pleural surface of the diaphragm.

Upon the lymphatics of muscle they find the peculiar serous cells first described by Ludwig and Schweigger Seidel, whose views they fully confirm, in opposition to those expressed by Ranvier. They deny the existence of stomata in the Mammalia, but admit it in the case of frogs; and as the peritoneum of the latter is lined by crenated lymphatic endothelium, they admit its connexion with the lymphatic system; but, on account of the absence of the latter endothelium as well as stomata from the serous cavities of mammals, they deny any connexion between these and the lymphatics. While describing the structure of basement membrane, they discuss the facts adduced by Klein and Debove as bearing on the question of absorption, and give their own views on this question. They hold that the lower surface of the diaphragm is an exuding one, and only an absorbent one when all the natural conditions are reversed.

They describe the minute anatomy of the lymphatics of the intestine, and show that it is the glandular structures, and not the muscles of the wall, that regulate the amount of these vessels. They also trace complete identity between these and the lymphatics of striated muscle. In either case they figure the connective-tissue cavities as forming the radicles of the lymphatics, but hold that these are not the only lymphatic afferents, nor that that is their only function. To prove this, they discuss the nature of these cavities, as they have discovered them in tendon and other gelatinous structures in different classes of animals to be of the same structure as in the cornea. Unlike man, the small mammals have no special vascular or lymphatic vessels in the peritoneal tissue, being dependent on the muscles below for those structures.

The authors finish by entering upon a minute description of the *technique* employed by them, and offer a series of about 60 camera-lucida drawings of preparations in their possession in illustration of their researches.

III. "Remarks chiefly on $487^2 \equiv 486$." By William Shanks. Communicated by the Rev. G. Salmon, D.D., F.R.S. Received November 29, 1876.

In the cases of 3, $3^2 \equiv 1$, also of 487, $487^2 \equiv 486$, we are unable to show why the Period itself is, in each case, divisible by the Prime. But we can show, with little labour, that the period arising from $\frac{1}{487}$ is itself divisible by 487, and therefore that $\frac{1}{487^2} \equiv 486$.

The number composed of 486 9s is divisible by 487. Now this number

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is made up of the two factors 243 9s and $\overset{\text{242 0s}}{100000..0001}$. The latter only is divisible by 487. The latter, moreover, admits of the factor $\overset{\text{80 0s}}{1000..001}$ being thrown out, as 487 is not exactly contained in it. We thus have the number $\overset{\text{81 9s}}{999..99}\overset{\text{80 0s}}{000..0001}$, which may be shown to be divisible by 487^2, as follows :—

Since $\frac{10^{81}}{487} \equiv 233$, $\therefore \frac{10^{81}-1}{487} \equiv 232$; hence $\frac{(10^{81})(10^{81}-1)+1}{487} \equiv 0$.

Therefore $\frac{1}{487} \equiv 486$.

Again, $\frac{10^{10}}{487^2} \equiv 6284$, $\frac{10^{20}}{487^2} \equiv 118602$, $\frac{10^{40}}{487^2} \equiv -58986$, $\frac{10^{81}}{487^2} \equiv 78153$;

$\therefore \frac{10^{81}-1}{487^2} \equiv 78152$. Hence $\frac{(10^{81})(10^{81}-1)+1}{487^2} \equiv 0$, that is $\frac{1}{487^2} \equiv 486$.

We may show that $\frac{1}{487^2} \equiv 486$ in another way, thus :—

Taking, as before, the numbers $\overset{\text{81 9s}}{99..99}\overset{\text{80 0s}}{000..001}$, and dividing the nines by 487, we have remainder 232.

Hence, *after* 232, by dividing by 487, the quotient is 232 times the first half $+\,111$ $\left(\frac{(232 \times 233)+1}{487} \equiv 111\right)$.

Divide first half of quotient by 487, and we have remainder 160.

Hence $\frac{160 \times 233}{487} \equiv 268$.

Remainder from *after* 160 is got from $\frac{160 \times 232 + 111}{487} \equiv 219$; hence $\frac{268+219}{487} \equiv 0$. In other words, the quotient obtained from dividing the large number (given above), consisting of 162 digits, by 487 is itself divisible by 487.

It is observable that 486 is an aliquot part of 487^2-1; generally, that P^2-1 is divisible by $P+1$.

The Prime $69499 \equiv 486$; but, as is usual, $69499^2 \equiv 486 \,.\, 69499$. Hence the number $\overset{\text{81 9s}}{999..9}\overset{\text{80 0s}}{000..01}$ is divisible by 69499. We append the results of these divisions, as being somewhat curious, the last result being prime or otherwise.

487. 20533 88090 34907 59753 59342 91581 10882 95687 88501 02669
40451 74537 98767 96714 57905 54414 76386 03696 09856 26283
36755 64681 72484 59958 93223 81930 18480 49281 31416 83778
23408 62423.

69499. 42 16402 64958 74250 00737 87046 36777 99375 12912 73311
43614 89064 75972 82950 13260 58633 29520 29987 05564 38657
66605 24773 47376 76509 15591 83535 79093 38910 22857 11876
34134 30929.

60 66853 69514 29876 69949 02151 63927 52953 46570
07023 75019 62711 34797 37766 20182 42900 32259 88844 52386
92150 48569 40061 68976 19403 38122 61378 99960 27151 79868
94597 53571.

February 22, 1877.

Dr. J. DALTON HOOKER, C.B., President, in the Chair.

The Presents received were laid on the table, and thanks ordered for them.

The following Papers were read:—

I. "On Crookes's Force." By G. Johnstone Stoney, M.A., F.R.S., and Richard J. Moss, F.C.S. Received January 12, 1877.

In two papers by one of the authors of the present communication, which appeared in the Philosophical Magazine for March and April 1876, it has been shown that the motion of the blackened disks of a Crookes's radiometer can be explained by the known dynamical properties of the trace of gas which is present, and the term "Crookes's force" is proposed to designate the reaction which comes into play between the blackened disks and the walls of the exhausted chamber when a difference of temperature exists between them. Shortly after the first of these papers appeared we commenced an experimental investigation of the subject with the view of learning, if possible, the laws to which the force conforms. The investigation is still in progress, and, being exceedingly tedious, it will require a great expenditure of time before it is completed; we propose, however, in this preliminary paper to describe the apparatus and methods of observation employed, and to give some of the results already obtained.

If the pressure which is exerted on the blackened pith surfaces reacts on the sides of the glass envelope, it follows that a transparent disk delicately suspended close to a stationary disk of blackened pith ought to move away from the pith, and therefore towards the light, when the